

ABSTRACT

A method and device for processing a received signal by detecting within the received signal a plurality of possible symbols transmitted by or for a plurality K of users, each of the plurality of possible symbols belonging to a modulation constellation and being the subject of a spectral spreading by a spreading sequence. The step of detecting includes substeps of: a) filtering the received signal by supplying a complex vector characteristic of the received signal and decomposing the complex vector into real and imaginary vectors; b) separately searching for a closest neighbor of the real vector and a closest neighbor of the imaginary vector within a respective real and imaginary lattice of points corresponding to the modulation constellation; and c) estimating the transmitted symbols from components of the closest neighbor of the real vector and the closest neighbor of the imaginary vector to produce a vector of estimated symbols.